UTGOING LTR NO

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DIST.	LTR	ENC
HOFF, F.H.		
FITZKE, J.C.		
HUNGAME, A.H.		
DUCHER, D.W.		
VIS, J.G.		
FRED, J.E.	X	
FRERA, D.W.		
FRERA, K.P.		
HRIS, L.R.		
IKOR, F.J.		
NCIS, G.E.		
DOWIN, R.		
LYTI		
KER, E.H.		
S, J.P.		
ISH, J.M.	X	
BY, W.A.		
KEBO, J.A.		
E.M.	X	
ESTIC, J.B.		
ANIEL, M.G.		
RRENS, B.E.		
ITROSS, R.W.		
IGAN, R.V.	X	
ITH, P.		
MER, L.A.		
NELL, R.F.		
TER, G.I.	X	
LITO, V.M.		
IADES, J.I.	X	
FELL, B.F.		
NNON, W.M.		
INSON, E.R.		
BE, J.S.		
KINSON, R.B.		
SON, J.M.		
ING, E.R.		
E, J.O.	X	
NDBERG, D.A.	X	
Lson, E.M.	X	
Greengard, T.C.	X	
RES CONTROL	x	x
FFIC		

ASSIFICATION:

N		
CLASSIFIED	X	X
NFIDENTIAL		
CRET		

HORIZED CLASSIFIER SIGNATURE

3-12-91

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EPLY TO LTR NO

N/A

APPROVALS:

- (for TCG)

G & TYPIST INITIALS

6469 (Rev 11/90)

EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

March 18, 1991

91-RF-1074

Robert M. Nelson, Jr.
Manager
DOE, RFO

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Attn: F. R. Lockhart

TRANSMITTAL OF OPERABLE UNIT 2 (OU-2) PHASE II RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION (RFI/RI) WORK PLAN (ALLUVIAL) REVISION ONE

The OU-2 Phase II RFI/RI Work Plan (Alluvial) Revision One is enclosed for DOE transmittal to EPA and CDH for their information. The Interagency Agreement (IAG) among DOE and these agencies does not require a formal review and approval of the RFI/RI work plan revisions.

The Phase II RFI/RI Work Plan (Alluvial) was reviewed and conditionally approved by EPA/CDH on April 12, 1990. This conditional approval required that the work plan revisions include an environmental evaluation plan and a quality assurance addendum. Both of these items are included in the enclosed Revision One version of the Alluvial Work Plan. Comments by DOE's staff have been incorporated in this work plan also.

If you have any questions regarding this work plan or related issues, please contact Tom Greengard at extension 7121 or Brook Wilson at extension 3200, both of the Remediation Programs Division.

J. M. Kersh, Associate General Manager
Environmental Restoration & Waste Management

EHW:plf

Orig. and 1 cc - R. M. Nelson, Jr.

Enclosures:
As Stated

ADMIN RECORD

REVIEWED FOR CLASSIFICATION/UCNI
BY 820
DATE 7-12-93

OPERABLE UNIT TWO

EXECUTIVE SUMMARY

The final Phase II RCRA Facilities Investigation and Remedial Investigation (RFI/RI) Workplan (Alluvial) for OU-2 originally issued on 12 April 1990, has been revised and now is being reissued as Revision One. This Revision One version of the Alluvial Workplan incorporates comments prepared by the EPA and CDH as well as technical and editorial changes made to update the workplan and to make it more consistent with other workplans. This workplan is the first one of two workplans; one is for Alluvium and the other is for Bedrock(issued 5 Feb. 1991 as a draft final).

The following changes have been made and incorporated into Revision One:

- Revised geological characterization based on recent seismic surveys and reassessment of geological logs.
- New site conceptual model and risk assessment model.
- Clarification of data quality objectives.
- Revised discussion of treatability study programs.
- Addition of seven plume characterization monitor wells east of the East Trenches Area.
- Elimination of a redundant surface water sampling program that overlaps the existing surface water sampling programs for OU-5, OU-6 and the Site-wide Surface Water Characterization program. Seep waters shall be sampled as part of this OU-2 Phase RFI/RI (Alluvial) Workplan.
- Addition of a more sophisticated surface soils sampling program to assess the mobility of plutonium in the soil/water environment.
- Addition of a detailed environmental evaluation plan (EEP).
- Addition of a detailed discussion on applicable or relevant and appropriate requirements (ARAR's) and a significant modification to the OU-2 ARAR's.
- Addition of a Quality Assurance Addendum (QAA)
- Modification of the Field Sampling Plan (FSP)

Extent of Groundwater Contamination

Contamination of groundwaters within the Upper Hydrostratigraphic Unit (HSU) includes volatile organics(carbon tetrachloride, tetrachloroethane and trichloroethene), trace metal (strontium, barium, copper, and nickel). Radionuclides detected include uranium-238 with invalidated indications of plutonium and americium downgradient of 903 Mound area.

Extent of Surface water Contamination

Contamination in surface waters and seeps adjacent to the OU-2 area include organic chemicals, elevated total dissolved solids, uranium-238, strontium, zinc, major ions and invalidated concentrations of plutonium.

Extent of Surface Soils Contamination

Plutonium and americium and trace metals occur at elevated levels above background in the surface soils east of the 903 Pad area Mound area East Trenches area. These areas are downwind to the southeast of 903 Pad.

Proposed Field Sampling Program

Proposed investigation activities are presented in the field sampling plan (FSP). The field sampling program is comprised of four steps:

- o Step One-Review Existing information and plan activities
- o Step Two- Conduct Preliminary and Screening Studies
- o Step Three-Conduct Detailed Sampling Programs
- o Step Four- Conduct Field Tests and Laboratory Analytical Tests.

Step One involves data and document review, planning activities, training, preparation and mobilization of field activities. Screening studies will be needed for the soils sampling and environmental evaluation programs for site sample locations

Step Two involves location surveys, for sampling stations, boreholes and IHSS's, conducting geophysical surveys for undetected metal objects.

Step Three involves conducting three separate detailed sampling programs: the Surface Soils Sampling Program with 88 stations and 15 test pits ; a Borehole Sampling Program designed to characterize plumes in 130 monitor wells, and sources in 46 boreholes and 63 monitor wells; and an Environmental Evaluation Plan designed to characterize the existing biological and ecological conditions in terrestrial and aquatic environments.

Step Four involves performing insitu hydraulic conductivity tests, groundwater tracer tests to assess mobility of contaminants; and laboratory tests that include physical properties of surface and subsurface materials (moisture, density, particle size, atterberg limits, permeability) and analytical chemical contamination constituents in surface soils, borehole samples, biological samples, groundwater, and surface waters. All of this data will be compiled and entered into the Rocky Flats Environmental DataBase System(RFEDS).

The workplan is the means by which new data is collected to characterize the extent of the contamination sources and plumes. In OU-2 two Phase II RFI/RI workplans are being implemented to characterize both the alluvium and the bedrock. This data then is analyzed and presented in the final RCRA Facility Investigation /Remedial Investigation Report (RFI/RI) This information is then used for risk analysis and for the feasibility study. The risk analysis is an assessment of the hazard to human health and thus the need for remediation. The RFI/R/I will be the basis for RCRA Corrective Measures Study/ CERCLA Feasibility Study(CMS/FS). The CMS/FS describes the remedial alternatives and recommended remedial action needed to remove and treat the contamination within the soils and waters beneath the OU-2 area and the final assessment of risk to the affected human population.